

## Smoking & Tobacco Use

# Outbreak of Lung Injury Associated with the Use of E-Cigarette, or Vaping, Products



CDC, the U.S. Food and Drug Administration (FDA), state and local health departments, and other clinical and public health partners are investigating a multistate outbreak of lung injury associated with use of e-cigarette, or vaping, products.

[For the Public](#)[For Healthcare Providers](#)[For Health Departments](#)[Resources](#)[Digital Press Kit](#)

**Updated October 31, 2019 at 1:00 PM EDT**

## What We Know

### *About the Outbreak:*

- As of **October 29, 2019**, 1,888\* cases of e-cigarette, or vaping, product use associated lung injury (EVALI) have been reported to CDC from 49 states (all except Alaska), the District of Columbia, and 1 U.S. territory.
  - Thirty-seven deaths have been confirmed in 24 states (**as of October 29, 2019**).
  - [Latest outbreak information](#) is updated every Thursday.


### *About Patient Exposure:*

- All EVALI patients have reported a history of using e-cigarette, or vaping, products.
  - THC is present in most of the samples tested by FDA to date, and most patients report a history of using THC-containing products.
  - The latest national and state findings suggest products containing THC, particularly those obtained off the street or from other informal sources (e.g. friends, family members, illicit dealers), are linked to most of the cases and play a major role in the outbreak.

## What We Don't Know

- At this time, FDA and CDC have not identified the cause or causes of the lung injuries in these cases, and the only commonality among all cases is that patients report the use of e-cigarette, or vaping, products.
- No one compound or ingredient has emerged as the cause of these illnesses to date; and it may be that there is more than one cause of this outbreak. Many different substances and product sources are still under investigation.

## What CDC Recommends

- CDC recommends that you do not use e-cigarette, or vaping, products that contain THC.
- CDC also recommends that people should **not**:
  - Buy any type of e-cigarette, or vaping, products, particularly those containing THC, off the street.
  - Modify or add any substances to e-cigarette, or vaping, products that are not intended by the manufacturer, including products purchased through retail establishments.
- Since the specific compound or ingredient causing lung injury are not yet known, the only way to assure that you are not at risk while the investigation continues is to consider refraining from use of all e-cigarette, or vaping, products.
- If you are an adult using e-cigarettes, or vaping, products, to quit smoking, do not return to smoking cigarettes. Adults addicted to nicotine using e-cigarettes should weigh all risks and benefits and consider utilizing [FDA-approved nicotine replacement therapies](#) .
- If people continue to use an e-cigarette, or vaping, product, carefully monitor yourself for symptoms and see a healthcare provider immediately if you develop [symptoms](#) like those reported in this outbreak.
- Irrespective of the ongoing investigation:
  - E-cigarette, or vaping, products should never be used by youths, young adults, or women who are pregnant.
  - Adults who do not currently use tobacco products should not start using e-cigarette, or vaping, products. There is no safe tobacco product. All tobacco products, including e-cigarettes, carry a risk.
- THC use has been associated with a wide range of health effects, particularly with prolonged heavy use. The best way to avoid potentially harmful effects is to not use THC, including through e-cigarette, or vaping, products. Persons with marijuana use disorder should seek evidence-based treatment by a health care provider.
- CDC will continue to update guidance, as appropriate, as new data emerges from this complex outbreak.

If you have questions about CDC's investigation into the lung injuries associated with use of e-cigarette, or vaping, products, contact [CDC-INFO](#) or call 1-800-232-4636.

## Key Facts about Use of E-Cigarette, or Vaping, Products

- Electronic cigarettes — or e-cigarettes — are also called vapes, e-hookahs, vape pens, tank systems, mods, and electronic nicotine delivery systems (ENDS).
- Using an e-cigarette product is commonly called vaping.
- E-cigarettes work by heating a liquid to produce an aerosol that users inhale into their lungs.
- The liquid can contain: nicotine, tetrahydrocannabinol (THC) and cannabinoid (CBD) oils, and other substances and additives. THC is the psychoactive mind-altering compound of marijuana that produces the “high”.

## Latest Outbreak Information

*Updated every Thursday*

- This complex investigation spans almost all states, involves over a thousand patients, and a wide variety of brands and substances and e-cigarette, or vaping, products. Case counts continue to increase and new cases are being reported, which makes it more difficult to determine the cause or causes of this outbreak.
- As of **October 29, 2019**, 1,888\* cases of e-cigarette, or vaping, product use associated lung injury (EVALI) have been reported to CDC from 49 states (all except Alaska), the District of Columbia, and 1 U.S. territory.
  - **Thirty seven** deaths in **24** states and the District of Columbia: Alabama, California (3), Connecticut, Delaware, Florida, Georgia (3), Illinois (2), Indiana (3), Kansas (2), Massachusetts, Michigan, Minnesota (3), Mississippi, Missouri, Montana, Nebraska, New Jersey, New York, Oregon (2), Pennsylvania, Tennessee (2), Texas, Utah, and Virginia.
    - The median age of deceased patients was 53 years and ranged from 17 to 75 years (**as of October 29, 2019**).
  - More deaths are under investigation.
- Among 1,378 patients with data on sex (**as of October 15, 2019**):
  - 70% of patients are male.
- Among 1,364 patients with data on age (**as of October 15, 2019**):
  - The median age of patients is 24 years and ages range from 13 to 75 years.
  - 79% of patients are under 35 years old.
  - By age group category:
    - 14% of patients are under 18 years old;
    - 40% of patients are 18 to 24 years old;
    - 25% of patients are 25 to 34 years old; and
    - 21% of patients are 35 years or older.
- Among 867 patients with information on substances used in e-cigarette, or vaping, products in the 3 months prior to symptom onset\*\* (**as of October 15, 2019**):
  - About 86% reported using THC-containing products; 34% reported exclusive use of THC-containing products.
  - About 64% reported using nicotine-containing products; 11% reported exclusive use of nicotine-containing products.
- See CDC's Lung Injury [cases map](#) and [bar chart](#) of dates of symptoms onset and hospital admission for Patients with e-cigarette, or vaping, product use associated lung injury (EVALI) for more details.

## What CDC is Doing

*Public Health Response:*

- CDC's Lung Injury response efforts are committed to:
  - Identify and define the risk factors and the source for lung disease associated with e-cigarette product use, or vaping.
  - Detect and track confirmed and probable cases in the US.

- Communicate actionable recommendations to state, local, and clinical audiences.
- Establish lab procedures that can assist with the public health investigation and patient care.

#### *Partnerships:*

- CDC is working 24/7 to identify the cause or causes of this outbreak through partnerships with states and other federal agencies.
- CDC continues to work closely with FDA, states, public health partners, and clinicians on this investigation by providing consultation and technical assistance to states on communication, health alerts, public outreach, and surveillance.
- CDC has activated the Emergency Operations Center (EOC) to coordinate activities and provide assistance to states, public health partners and clinicians around the nation.
- CDC worked with states to create [primary and out-of-hospital case definitions](#) to classify confirmed and probable cases in a consistent way. States are in the process of classifying patients.
  - We expect that states and clinicians may look back for past lung injury cases based on CDC's case definition. CDC will report numbers of confirmed and probable lung injury cases once states have finalized their classification of cases.
- By invitation, CDC has deployed Epidemic Intelligence Service (EIS) officers and other CDC staff to support states.

#### *Media and Communication:*

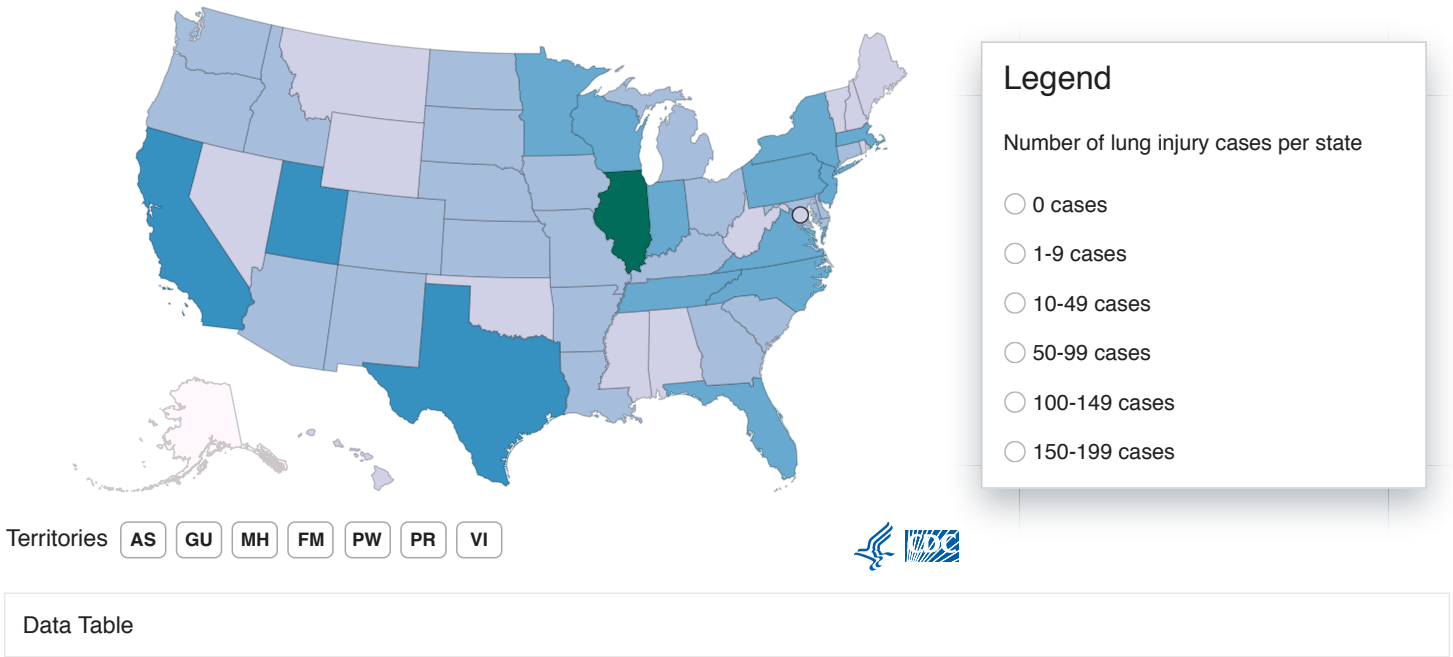
- CDC is maintaining an [outbreak webpage](#) with key messages and weekly updates on case counts, deaths, and resources.
- CDC is holding congressional briefings, media telebriefings, and regular calls with health departments, clinicians to provide timely updates.

#### *Laboratory Testing:*

- CDC is expanding the range of available laboratory testing.
  - CDC is currently testing bronchoalveolar lavage (BAL) fluid samples, as well as blood or urine samples paired to BAL fluid samples.
  - CDC is testing pathologic specimens, including lung biopsy or autopsy specimens, associated with patients.
  - CDC is offering [aerosol emission testing](#) of case-associated product samples from e-cigarette, or vaping, products and e-liquids. Analysis of aerosol emissions will augment FDA's ongoing work to characterize e-liquid and will improve our understanding of exposure among case-patients associated with the Lung Injury outbreak. CDC is coordinating e-cigarette, or vaping, product analysis with FDA.
  - Results may provide insight into the nature of the chemical exposure(s) contributing to this outbreak.
- CDC developed [guidance documents](#) for were created to assist public health laboratories, healthcare providers, and pathologists, and others, with specimen collection, storage, and submission.
- For more information and resources visit [For the Public](#), [For Healthcare Providers](#) and [For State and Local Health Departments](#) as well as our [Publications and Resources](#) page.

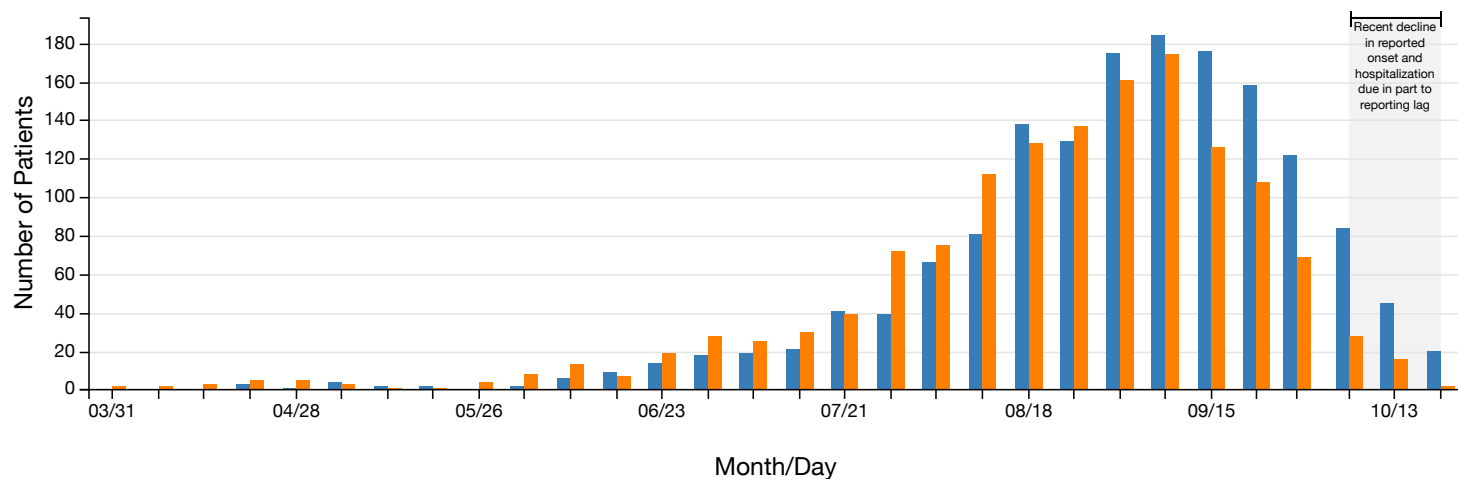
\* The increase in lung injury cases from last week represents both new patients and recent reporting of previously-identified patients to CDC.

\*\* Based on complete reports received.



# Dates of symptom onset and hospital admission for patients with lung injury associated with e-cigarette use, or vaping — United States, March 31–October 26, 2019

☐ Date of Admission (N=1559) ☐ Date of Symptom Onset (N=1403) [Reset](#)



Data Table

	03/31/2019	04/07/2019	04/14/2019	04/21/2019	04/28/2019	05/05/2019	05/12/2019	05/19/2019
Date of Admission (N=1559)	0	0	0	3	1	4	2	
Date of Symptom Onset (N=1403)	2	2	3	5	5	3	1	

[Scroll for additional info](#)

Region Name	Start Date	End Date
Recent decline in reported onset and hospitalization due in part to reporting lag	10/6/2019	10/20/2019